

## Sheldrake, Sean

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**From:** Sheldrake, Sean  
**Sent:** Friday, September 11, 2015 10:38 AM  
**To:** 'BAYUK Dana'  
**Cc:** Peterson, Lance; LARSEN Henning  
**Subject:** RE: NW Natural, Groundwater Monitoring Program Modifications

Thanks for the update Dana, you too. S

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-----Original Message-----

From: BAYUK Dana [mailto:BAYUK.Dana@deq.state.or.us]  
Sent: Friday, September 11, 2015 9:26 AM  
To: Sheldrake, Sean  
Cc: Peterson, Lance; LARSEN Henning  
Subject: NW Natural, Groundwater Monitoring Program Modifications

Morning Sean.

NW Natural collects groundwater samples for analysis: 1) along the shoreline of the Gasco and Siltronic sites for purposes of monitoring HC&C system performance; and 2) in the uplands of both sites to maintain groundwater chemistry datasets at certain monitoring well locations.

The next site-wide sampling event is scheduled to begin next week and is comprehensive, involving approximately 100 installations.

Consistent with previous agreements, NW Natural included recommendations for modifying the sampling program in the July 2015 "Groundwater Quality Data Monitoring Report" (Monitoring Report). DEQ reviewed and discussed the report with Anchor (John Renda) and Hahn (Rob Ede) on September 2nd.

I wanted to let you know that based on our review of the Monitoring Report and discussions with John and Rob, DEQ is approving changes to the HC&C system performance monitoring program, including:

- Removing monitoring wells MW-26U, MW-27U, MW-34-L, and MW-38U from the sampling schedule due to the consistent accumulation of MGP DNAPL in the installations of between one and four feet;
- Removing MW-25L from the monitoring program because it is now a control well and is located near MW-1-82 which: 1) is constructed over similar depth intervals; and 2) has historically had higher detected concentrations of MGP constituents; and
- Given the HC&C system has been operating at “treatment system maintenance flows” since Fall 2013, beginning with the September 2015 sampling event extraction wells will be sampled quarterly for the first-year of full-scale full-time operation (instead of monthly) and the analyte list will be expanded to include “river parameters,” including calcium, potassium, sodium, iron (total and dissolved), magnesium (total and dissolved), sulfate, chloride, bicarbonate, carbonate, and nitrate.

In addition, to the groundwater monitoring program we also followed up on recommendations made by NW Natural in Section 7 of Appendix A (DNAPL Monitoring Summary Report – 2014 NW Natural Gasco Site) of the January 2015 HC&C System Phase 1 Testing Data Summary Report by approving the following:

For wells that have had no DNAPL detections to date, it is recommended to monitor every 2 months (DSB note - instead of monthly), or six times per year. For wells that have had DNAPL detections, the frequency of monitoring will be unchanged from the schedule shown in Table 1. If a new DNAPL detection is made in any well on the semi-monthly monitoring list, or if the rate of DNAPL entry into a well appears to be increasing, the monitoring frequency of that well will be changed to weekly until the rate of DNAPL entry can be assessed, and the monitoring frequency will be adjusted at that time.

DEQ believes the approved recommendations will maintain or enhance the HC&C system monitoring program.

I follow-up with Lance regarding any questions you have regarding this e-mail, and hope your day goes well.

Dana